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PERCEPTIONS OF KNOWLEDGE SHARING AMONG SMALL FAMILY FIRM LEADERS – A STRUCTURAL EQUATION MODEL

Abstract

Small family firms have many unique relational qualities with implications for how knowledge is passed between individuals. Extant literature posits leadership approach as important in explaining differences in knowledge sharing climate from one firm to another. This study investigates how leadership approaches interact with family influence to inform perceptions of knowledge sharing. We utilise survey data ($n = 110$) from owner-managers of knowledge-intensive small family firms in Scotland. Our findings present a choice in leadership intention, contrasting organisation-focused participation against family-influenced guidance. Insight is offered on the implications of this leadership choice at both organisational and familial level.

Keywords

family firm leadership, knowledge sharing, path-goal, factor analysis, family influence

Introduction

A family firm's ability to manage its critical knowledge resources can often be the difference between success and failure in dynamic environments (Chirico & Salvato, 2008). While a number of studies have investigated the particular sensitivities of transferring knowledge across multiple family generations (Boyd & Royer, 2012; Giovannoni, Maraghini & Riccaboni, 2011; Hatak & Roessl, 2015) and the role of external knowledge in this process (Niemelä, 2004; Salvato & Corbetta, 2013), relatively few consider the management of internal knowledge. Of those that do, fewer still consider the impact characteristics of leadership may have on perceptions, though research highlights that where knowledge is considered in the everyday scenarios of family firms, the enhanced committal and relational capital among family members (Chirico, 2008; Chirico & Salvato, 2008) and the role of family in developing deep, common, firm-specific tacit knowledge (Sirmon & Hitt, 2003) can be

observed. However, the impact of family influence can also make knowledge practices more complex than in nonfamily firms (Sirmon, Arregle, Hitt & Webb, 2008); for instance, when entitlement-based nepotism can undermine the benefits associated with common experiences and knowledge interpretation (Jaskiewicz, Uhlenbruck, Balkin & Reay, 2013), or with family members who find difficulty in informally sharing knowledge, even purposefully centralising such knowledge in one or a few individuals (Cabrera-Suárez, De Saá-Pérez & García-Almeida, 2001; Zahra, Neubaum & Larrañeta, 2007).

In this article we examine how characteristics of leadership approach influence the family firm leader's perception of knowledge sharing. We attempt to answer calls from Wang and Noe (2010) to greater understand the role that leaders' perceptions can play in fostering knowledge sharing norms. The importance of intra-organisational knowledge sharing has been established in the wider organisational literature for some time now, with direct links made to performance, innovation and the creation of a strategically sustainable *learning* organisation (Calantone, Cavusgil & Zhao, 2002; Verona, 1999). Traditional notions of knowledge sharing via information technology and systems management (Davenport, DeLong & Beers, 1998) have since yielded to a greater appreciation of the role of individuals, and in particular, the connections between individuals as a determinant of knowledge sharing (Ipe, 2003). From this 'people perspective' of knowledge sharing, questions around social and relational climate come to the fore (Collins & Smith, 2006; Yahya & Goh, 2002). Specifically we ask, how do small family firm leaders approach knowledge sharing in the firm, and what role does family influence play in this?

We borrow from recent studies in the more general management sphere by conceptually linking leadership approach to the creation of a knowledge sharing culture (Carmeli, Gelbard & Reiter-Palmon, 2013; Lee, Gillespie, Mann & Wearing, 2010); however we do this within the unique relational context of small family firms (Habbershon, 2006). The coordination of individually held knowledge resources can be considered a particularly crucial antecedent to performance in small family firms (Dotsika & Patrick, 2013; Thorpe, Holt, Macpherson & Pittaway, 2005). In order to investigate the role of leadership in creating a knowledge sharing culture, we use survey results from

110 family-related owner-managers of small family firms in the knowledge-intensive sectors of Scotland, this is supplemented by complementary qualitative data from within firms to illustrate the meaning and implications of leadership approach. While there has been some discussion on the forms of leadership dominant in family firms (for example: Mussolino & Calabró, 2014 and Caspersz & Thomas, 2015), this study looks to extend these existing theories by investigating the variation of leadership approach in small family firms. We find there to be at least two divergent leadership perspectives, which we use to expand our understating of how various approaches interact with family influence and impact perspectives of knowledge sharing. As such, we contribute to the family firm literature by improving theories on family firm leadership and better explaining its implications for the treatment of knowledge.

The rest of this article is structured as follows. In the next section, we explore the relevant themes from the literatures on leadership and knowledge sharing in family firms, and present our conceptual hypotheses. We then detail the methodological design of the study and present our empirical findings. Following the presentation of empirical findings, we discuss results and embed them within the context of the surrounding literature, thus positioning the article's key contributions to knowledge. Finally, we draw implications for both family firm theory and practice, and look to potential areas of future interest.

Background and conceptual model

Leadership and perceptions of knowledge sharing

Although research on the management of knowledge resources and in particular the concept of knowledge sharing has been generously treated over the past two decades (e.g. Davenport et al., 1998; Gagné, 2009; Hansen, 2002; Nonaka & Takeuchi, 1995), only a small number of these studies have explicitly posited knowledge sharing as a result of leadership behaviours. Of the studies that address this relationship, the role of the leader in creating and supporting a climate of creativity (Carmeli, Reiter-Palmon, & Ziv, 2010; Mumford, Byrne & Shipman, 2009; Reiter-Palmon & Illies, 2004) and in cultivating and nurturing relational exchanges of high quality (Atwater & Carmeli, 2009; Carmeli *et*

al., 2013; George & Zhou, 2001) comes to the fore. It is important to establish here the guiding assumption of this work, that knowledge sharing is not something that happens organically, but instead relies on careful leadership approaches to foster a culture of sharing (Srivastava, Bartol & Locke, 2006). In particular, the role of empowerment is highlighted in contrast more autocratic forms of leadership as being particularly beneficial in this regard (Yukl, 2011). Srivastava et al. (2006) consider the more empowering forms of leadership to be made up of both supportive and participative behaviours. However, other studies isolate participative forms of leadership and place them firmly at the forefront of a collaborative culture and fluid organisational infrastructure to facilitate the sharing of individually held knowledge (Gagné, 2009; von Krogh, Nonaka & Rechsteiner, 2012).

From this, we follow Joo (2010) by positing participative and supportive leadership approaches as antecedents to a perception of knowledge sharing culture. We consider the leader's perception of knowledge capabilities and knowledge sharing activity in the organisation to, in turn, influence their perception of performance, both present and future. This link is important as beliefs in performance capabilities, conceptualised as perceptions of collective-efficacy (Bandura 2000; Lindsley, Brass & Thomas, 1995), are found to have a direct impact on actual performance. For instance, the goals that are set, the expectations of results and ultimately the amount of effort contributed, can all be related to perceptions of collective-efficacy (Gibson, 1999; Seijts, Latham & Whyte, 2000).

As in Bandura's (1997) explanation of self-efficacy based on an individual's comprehensive evaluation of their own resources and capabilities, when considering collective-efficacy a member, or indeed leader of a team will review how each member of the team is capable of performing (Taggar & Seijts, 2003). By focusing on the leader's perception of knowledge sharing capabilities in the team around her, we answer calls by Hannah, Avolio, Luthans & Harms (2008) to view leader efficacy as a multi-layered construct, which is as much influenced by the leader's view of their own abilities as it is by the leader's view of abilities in the team surrounding them.

From those who have investigated perceptions of knowledge sharing, the role of subjective norms emerges as impacting on intentions to share knowledge (Young, 2014; Zhang & Ng, 2013). In

particular, Li, Liu, Shang, & Xi (2014) found leader feedback, relating to promotion and positive encouragement, to be vital in enabling knowledge sharing in the organisation. However, Ford and Staples (2006) suggest that, in addition to normative conditions of encouragement and sharing, a perceived value of knowledge can positively relate to sharing behaviour. We follow Lin and Lee (2004), by positing that the role of the leader is embedded in all of these aspects. We suggest that the behavioural preferences of leaders will directly impact on their belief that the organisation demonstrates knowledge sharing behaviours. As such we see the perceptions of organisational leaders as an important factor in the creation of normative knowledge sharing cultures.

Expanding on this view, knowledge sharing is considered by Xue, Bradley & Liang (2011) to be a social behaviour, with socio-cultural factors enabling a sharing culture, and leadership as a driving force using both supportive and participative management tools. This echoes Connelly and Kelloway's (2003) suggestion that leadership commitment to knowledge sharing directly impacts the employee's perception of a sharing climate, and ultimately leads to greater sharing activity. Lee et al. (2010: 485) look to the mechanisms of how leadership enables knowledge sharing. In particular, they view the leaders who are 'knowledge builders' as being particularly able to foster a willingness in individual team members to "*disclose ideas and information*", which in turn impacts on the leader's perception of organisational capabilities and potential for performance.

The organisational benefits to be gained from a positive leadership perception of knowledge sharing are potentially great. While acknowledgment of the psychological and social psychological factors in leadership ability to create knowledge sharing culture continues to grow, to our knowledge this has yet to be investigated in the small family firm setting.

Path-goal theory

Before we can investigate the impact differing leadership approaches can have on perceptions of knowledge sharing, it is important to apply a leadership framework to uncover the array of leadership behaviours used in small family firms. To do this, path-goal theory of leadership behaviour is used (House, 1996; House & Mitchell, 1974). Path-goal theory assumes that the leader will demonstrate the

leadership behaviour most fitting with their context, so this framework allows us to investigate the various leadership contexts evident in our small family firm sample (Northouse, 2016; Yukl, 2011). We use a version of the path-goal framework adopted by Harris and Ogbonna (2001), where three potential leadership approaches are conceptualised: participative approaches; supportive approaches; and instructional approaches. In applying such an operationalised path-goal framework we are able to determine the array of leadership approaches displayed in the focal organisations and simultaneously investigate which of these are most compatible with positive perceptions of knowledge sharing (Dixon & Hart, 2010; Vecchio, Justin & Pearce, 2008). From the preceding discussion on the relationship between leadership approach and knowledge sharing, the following hypotheses can be put forward based on such a conceptualisation of path-goal theory:

H₁: A leader's preference for participative approaches will be positively related to perceptions of knowledge sharing in the firm.

H₂: A leader's preference for supportive approaches will be positively related to perceptions of knowledge sharing in the firm.

H₃: A leader's preference for instructive approaches will be negatively related to perceptions of knowledge sharing in the firm.

Knowledge sharing in small family firms

In the process of knowledge sharing, family firms can be considered to hold a unique advantage over non-family-based counterparts. In particular, the notion of internal trust is considered to ease the transfer of knowledge and information from one individual to another (Mooradian, Renzl & Matzler, 2006; Zahra & Filatotchev, 2004), and this element of trust is seen as particularly present in the context of a family firm (Chua, Chrisman & Bergiel., 2009; Karra, Tracey & Phillips, 2006). The kinship nature of a family, and affiliated individuals, has the power to foster a mutual and reciprocal learning culture and therefore advance the sharing of knowledge (Zahra et al., 2007). It is from such a perspective that family firms are considered to have advantageous relational abilities which exceed transactional agency relationships found in nonfamily organisations (Sonfield & Lussier, 2009; Zahra

& Filatotchev, 2004). Furthermore, strong and enduring forms of familial social capital can also help the development and maintenance of reciprocal social norms through a history of interaction and interdependence (Arregle, Hitt, Sirmon & Very, 2007; Pearson, Carr & Shaw, 2008). These elements of family firms have the potential to directly enhance knowledge sharing between invested individuals in the organisation. Such exchanged-based trust, like that considered to exist in family firms, is found by Huang, Iun, Liu & Gong (2010) to enhance the effect of participative leadership approaches on non-managerial contributions. While Mallén, Chiva, Alegre & Guinot (2015) suggest that leaders looking to create a supportive environment in which individuals are more open to taking risks and engaging in dialogue will feed off of altruistic notions, akin to those experienced in family firm climates (Schulze, Lubatkin & Dino, 2003). Hence, the following hypotheses can be proposed:

H_{4a}: Participative leadership approaches will positively interact with family influence to enhance perceptions of knowledge sharing.

H_{4b}: Supportive leadership approaches will positively interact with family influence to enhance perceptions of knowledge sharing.

While the nature of internal family firm relationships can help ensure a sufficient transfer of tacit knowledge between individuals, there is also evidence of a darker side to family influence in the firm, with implications for perceptions of knowledge sharing. Conflicts inherent in family situations (for instance, rivalries, jealousies, and exclusion of nonfamily) can lead to the higher levels of management in family firms becoming withdrawn and under informed (Poza, Hanlon & Kishida, 2004). Chirico and Salvato (2008) also note that stronger forms of family influence can in fact cause conflict, which can fracture the interpersonal relationships of the firms and thus inhibit relational-based knowledge sharing cultures. The results of such negativity may be that organisational members withhold information they deem valuable, and that processes are formalised to avoid conflict (Zahra et al., 2007). A consequence of this is a strengthening of family influence due to a prioritisation of knowledge from chosen individuals and a negation in the influence of ‘outsiders’ (Sonfield & Lussier, 2009), all of which undermines the notion of a knowledge sharing culture. The role of leadership in

such a pessimistically charged situation is, according to Sorenson (1999), one of conflict avoidance, which resonates with the idea of more task-oriented, guided instruction approaches (Yan & Sorenson, 2003).

H_{4c}: Instructional leadership approaches will interact with family influence to further depreciate perceptions of knowledge sharing.

In summary, we are investigating the impact of leadership approach on the leader's perception of knowledge sharing in small family firms. We also look to how the nature of family influence interacts with these leadership approaches, and the effects this interaction has on their perceptions of knowledge sharing. Our hypotheses are visualised in our conceptual model, shown in Figure 1.

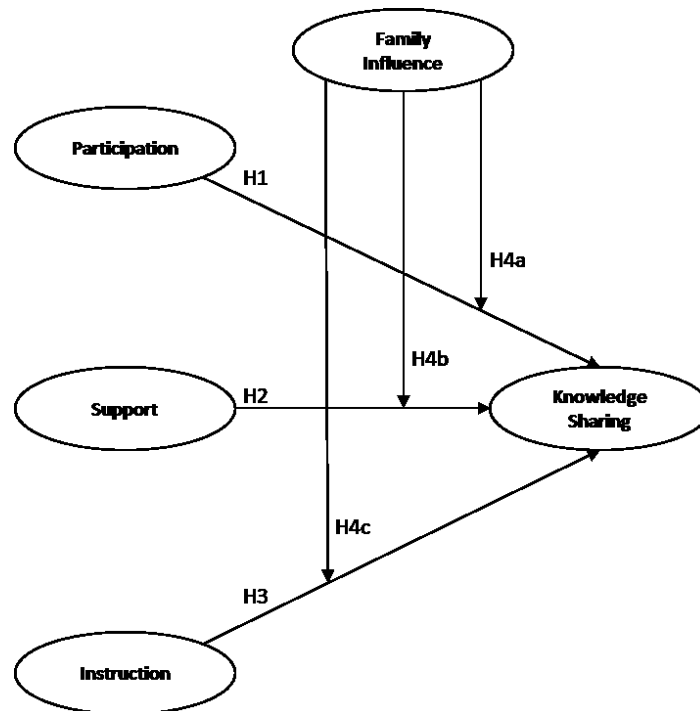


Figure 1: Original conceptual model

Method

We use covariance-based structural equation modelling (CB-SEM) to test the stated hypotheses and investigate relationships between the conceptual variables. CB-SEM allows examination of quality in measurement models based on latent variables, informing conceptual modifications where required, and for numerous complex direct and indirect effects to be examined, therefore suiting the application

of established theoretical concepts to a small family firm context, such as in this study (Astrachan, Patel, & Wanzenried, 2014; Wilson, Whitmoyer, Pieper, Astrachan, Hair & Sarstedt, 2014). Furthermore, the structured and explanatory presentation CB-SEM affords, helps to answer calls for greater statistical rigour in family firm research (Debicki, Matherne, Kellermanns & Chrisman, 2009). We present our analysis in a transparent and sequential manner, allowing for clarity in conceptual and analytical development. Complementing our quantitative analysis of self-reported leader perceptions, we provide supplementary qualitative data in our discussion of leadership approaches. The inclusion of this data has a dual purpose: First, we seek to triangulate analysis of the quantifiably differentiated leadership approaches with qualitative differentiation in terms meaning, providing mutual confirmation of differences in leadership approach; second, we look to complement our quantitative analysis by illustrating and elaborating on the implications of different approaches to knowledge sharing (Greene, Caracelli & Graham, 1989).

Sample

Quantitative survey data were collected from small and micro (0-50 employees) family firm owner-managers (leaders) in the knowledge-intensive sectors of Scotland. This size selection is based on a European Union definition of micro and small-sized enterprises (European Commission, 2003). We follow Chrisman, Chua, Pearson & Barnett (2012) by focusing on small firms because the relationship between family influence and organisational behaviours is likely to be more pronounced than in larger, more structurally complex organisations. We follow a definition of family firms provided by Westhead and Cowling (1999), where the firm is self-depicted as family-dominated, in the first instance, and then apply inclusion criteria from Sharma, De Massis & Gagne (2014) where the organisational structure must contain at least one kinship tie. Additionally, in order to only focus on those firms particularly reliant on knowledge-based resources (Bontis & Fitz-Enz, 2002), we apply Alvesson's (2004) typification of knowledge intensity as further inclusion criteria (respondents of the final sample can be categorised as: marketing activities (5.5%); property management (9.1%); education (12.7%); design (13.6%); events (13.6%); consultancy (13.6%); and legal/financial services (31.8%)). Although all industries can learn from a more people orientated perspective of knowledge

and knowledge sharing, the knowledge-intensive sectors show a particular vulnerability due to the high-involvement and people-centric nature of knowledge work (Bontis & Fitz-Enz, 2002; Kondra & Hurst, 2009).

A form of convenience snowball sampling was used to gain research participants; we considered this strategy particularly appropriate as small family businesses can often be ‘hidden-by-choice’ (Noy, 2008), in that family aspects are not normally reported in national business databases and small business owners themselves are often reported as sceptical towards the advances of academic inquiry (Curran & Blackburn, 2001). To initiate this process, we contacted family businesses on the existing databases of the Scottish Family Business Association and the various Chambers of Commerce throughout the different regions of Scotland, as well as those identified via the businesses’ public documentation, Internet search and referrals from early respondents (following the sampling strategies of Venter, Boshoff & Maas, 2005 and Warrington, Venter & Boshoff, 2012). Where there was ambiguity as to whether the business meets the inclusion criteria of the study, we contacted the business telephonically to confirm their appropriateness and willingness to contribute. The final questionnaires were mailed to the 204 businesses identified, along with a cover letter stating the intentions of the study and asking respondents to confirm their business satisfies the inclusion criteria and that respondents were indeed the family-based owner-manager of the business. In an attempt to maximise return rate, all questionnaire packs contained a pre-paid envelop for return and details for an electronic version of the instrument as an alternative response route, along with a letter and email (where possible) sent 14 days after the initial mail thanking respondents for their contribution and encouraging those who have not yet responded.

A total of 110 usable survey responses were received (71 paper responses and 39 electronic responses), representing a return rate of 53.9% against the original sample frame. 14 others were discounted as they did not meet the inclusion criteria (i.e. stated in the response that they were not, or were no longer, a family business according to this study’s definition), and 10 returned the blank questionnaire. This response rate is slightly higher than the average response rate from individuals (52.7%) reported by Baruch and Holtom (2008), and suggests a validity and interest in the study from

the target population. Following Binz, Hair, Pieper & Baldauf (2013), steps were taken to ensure validity of our findings was not threatened by non-response bias. Responses were divided into early and late respondents (1st wave after the initial mailing; 2nd wave after the second mailing) and no significant differences were found in the responses of the two waves. Moreover, we analysed the responses of paper and online formats and also found no significant differences. Therefore, following Armstrong and Overton (1977), non-response bias does not appear to be a major concern.

Construct measures

The survey instrument used comprises three previous independent, fully validated scales. The first seeks to measure the influence of family on the organization's cultural behaviours using the 12-item culture subscale of the F-PEC scale of family influence, developed by Astrachan, Klein and Smyrnios (2002) and Klein, Astrachan and Smyrnios (2005). This scale is chosen over others due to the continuous nature in which family influence is treated, thus avoiding the outdated dichotomising of 'family' and 'nonfamily' firms (Chrisman, Kellermanns, Chan & Liano, 2010). Moreover, this scale has withstood vigorous testing of its properties in terms of validity and reliability (Holt, Rutherford & Kuratko, 2010), although some authors have highlighted that both positive and negative relationships can be observed between familiness and measurements such as revenue, capital structure, growth and perceived performance (Rutherford, Kuratko & Holt, 2008). We use only the cultural sub-scale of the F-PEC in an attempt to ensure parsimonious focus on the cultural and behavioural implications of the work, while also conscious of keeping the survey instrument manageable for the respondent so as to maximise retention (following recent F-PEC use by Hiebl, Neubauer, Duller & Feldbauer-Durstmüller (2014) and Koropp, Kellermanns, Grichnik & Stanley (2014)).

The second measurement uses Harris and Ogbonna's (2001) 13-item instrument to gauge the distinct behavioural styles from path-goal leadership theory evident in the sample. This particular scale is highly esteemed in the leadership literature due to its faithful loyalty to the original theories of House and Mitchell (1974) and has been widely adopted (Kasemsap, 2013; Taormina, 2008). Although the use of this instrument has produced successful and valid measurement scales, for instance, in Harris and Ogbonna (2001) where three distinct leadership styles were identified, its greatest power is its

ability to uncover the range of leadership styles present in a contextually sensitive situation. In order to do this, the items of the scale must be subjected to an exploratory form of dimension reduction.

The process of knowledge sharing is defined as the sharing of individually held wisdom and skills to contribute to the firm's overall knowledge resource (Cabrera & Cabrera, 2005; Wang & Noe, 2010). In measuring the extent to which this process is perceived by organisational leaders it is therefore less beneficial to measure the stock of knowledge held in the firm, but more appropriate to determine perceptions of the level and nature of knowledge sharing activity. In order to establish this as our dependent variable, an eight-item scale is used from Wang, Hult, Ketchen and Ahmed (2009) to measure the leader's perceptions on the degree of knowledge mobilisation in the firm. This scale is rooted in established knowledge management literature, covering such issues as: openness to knowledge sharing; ease of knowledge source identification; and avenues available in which knowledge sharing can take place. The scale has been used in a number of studies and consistent levels of reliability have been noted (Huang & Wang, 2011; Jadallah, Al-Jaradat & Nagrash, 2012).

Supplementary qualitative data

Qualitative data is taken from 26 semi-structured interviews conducted in firms demonstrating each of the leadership approaches found through the SEM. We stratified the responses to our quantitative survey in line with the intended leadership approach found to be most dominant from the respondent. Then, we randomly sampled from within each of these stratified groups. Interviewees were questioned on the following: nature of adopted leadership styles; workplace implications of leadership perspective; and the management of individually held knowledge. We purposefully conducted interviews with the leader figure (in this case the owner-manager) of these organisations ($n = 15$) and, where possible, with employees ($n = 11$) until we had achieved a thematic saturation of the meaning and implications of leadership approach. This triangulation of data source looks to overcome the potential for single response bias in our modelling, to some extent. Interviews took place at the interviewee's place of business (average length around 40 mins) and were conducted, recorded and subsequently transcribed by the lead author. Field notes and secondary sources (websites, company records, etc.) were used primarily as background information in interview preparation and analysis.

While the use of qualitative data to greater illustrate the meaning and implications of our CB-SEM findings is useful, we stress that the emphasis of this study, and the core of the resulting discussion, lies in the quantitative CB-SEM. In this sense, the work represents a QUANT→qual dominance, with the qualitative data provided for illustrative and explanatory purposes as oppose to analytical (Molina-Azorín, López-Gamero, Pereira-Moliner & Pertusa-Ortega, 2012).

Control variables

In order to provide a narrow focus and enhance the possibility of uncovering patterns generalizable across the company range we have purposefully focused on small family firms in knowledge-intensive sectors (following Lepoutre & Henne, 2006). However, we accept that the range of business size (number of employees: $3 \geq x \leq 45$; $\bar{x} = 10.81$; $\sigma = 10.62$) and age (years in operation: $1 \geq x \leq 150$; $\bar{x} = 30.35$; $\sigma = 34.79$) in our sample may have some impact on behaviour, particularly as our sample covers both micro and small scale enterprises (Koropp et al., 2014). We therefore assess these as control variables; we also follow previous family business studies (Deephouse & Jaskiewicz, 2013; Lee, 2006) and control for stated industry served, within the broad range of knowledge intensive industries.

Model estimation

The first stage of model estimation involves creating a valid measurement model bespoke to the context of the study, to begin this process we use exploratory factor analysis (EFA) in the form of PCA to either uncover Harris and Ogbonna's (2001) three theorised dimensions of leadership (participation; support; and instrumentalism) or to create more meaningful leadership constructs in relation to our data. A combination of *Kaiser Criterion* (Kaiser, 1958) and the *scree test* (Cattell, 1988) is used to extract from the 13-item instrument those characteristics of leadership behaviour which go together. Following Hair, Anderson, Tatham & Black's (1995) recommendation, a <0.3 cut-off point for loading was used to remove items which did not load significantly onto a factor, along with the removal of cross-loaded items and items where the factor contains less than three loadings. Through this process, one item was removed as it loaded onto a single factor (*'I take action before consulting with employees <reverse coded>'*) and another removed due to cross-loading (*'I look out*

for the personal welfare of organisational members'). The resulting analysis found two clear factors (Table 1). The first, labelled "*Participation*" after qualitative assessment of the behavioural approaches therein, loads heavily onto a component with an eigenvalue of 3.837 and explaining 34.88% of total variance. The second, assessed and labelled "*Guidance*", as it combines elements of both support and instruction, produces an eigenvalue of 2.475 and explains 22.5% of total variance. This guidance construct represents the unique combination of items indicating instrumentalism and support from the path-goal framework, suggesting a form of leadership approach bespoke to the small family firm. The implications of this are discussed in more depth during our discussion.

Table 1: Exploratory factor analysis (leadership approach)

Item	Participation	Guidance
Before making decisions I consider what employees have to say	.863	
I listen to employees advice on which work to advance	.832	
I ask employees for their suggestions	.812	
Employees decide what and how things shall be done	.709	
I treat all organisational members as equals	.658	.338
When faced with a problem I consult with all organisational members	.650	
I help people make working on their tasks more pleasant		.794
I schedule the work to be done		.762
I maintain definite standards of performance		.718
I explain the way tasks should be carried out		.690
I do little things to make things pleasant		.670
Eigenvalues	3.837	2.475
Percentage variance explained	34.881	22.501
Cumulative percentage variance explained	34.881	57.382

Note: $N = 110$. Varimax rotation. Factor loadings higher than .3 shown. Kaiser-Meyer-Olkin measure of sampling adequacy = .818. Bartlett's test of sphericity: $\chi^2 = 446.731$ ($df = 55$, $p < 0.001$).

The second stage of measurement model validation requires the application of CFA to validate the two leadership constructs newly formed through the preceding EFA, along with the constructs of family influence and knowledge sharing (Anderson & Gerbing, 1988), this CFA analysis was conducted using AMOS (21) SPSS. In order to improve model fit, a further 15 items were removed for loadings under a 0.60 threshold using standardized regression estimates (Astrachan et al., 2014). The removed items were deleted from: Participation ('*Employees decide what and how things shall be done*'; '*I treat all organisational members as equals*'; '*When faced with a problem I consult with all organisational members*'); Guidance ('*I do little things to make things pleasant*'); Family focus ('*I*

would understand and support any family decision regarding the future of the family business'; 'Being involved with a family business has been a positive influence on my life'; 'Family members support the family business in discussions with friends, employees, or other family members'; 'Family members are proud to tell others that they are part of a family business'; 'There is little to be gained by participating with the family business on a long-term basis <reverse coding>'; 'All family members share similar values'; 'The family and business differ in values <reverse coding>'); and Knowledge Sharing ('We share information and knowledge with employees'; 'We often share ideas with other people of similar interest, even if they are based in different areas of the company'; 'We use information technology to facilitate communication effectively when face-to-face communication is not convenient'; 'When we need some information or certain knowledge, it is difficult to find out who knows about this, or where we can get this information <reverse coding>'). This procedure ultimately led to a CFA model consisting of: 3-item Participation; 4-item Guidance; 5-item Family Influence; and a 4-item Knowledge Sharing constructs.

The fit indices show that the resulting CFA measurement model fits the data to an acceptable level: $\chi^2 = 175.312$; $df = 98$; $\chi^2/df = 1.789$; $p < 0.001$; CFI = 0.901; IFI = 0.904; RMSEA = 0.085. These results follow others in the family business literature where, although there is a significant χ^2 , this is to be expected with models containing a number of variables. Importantly, the normed χ^2 is less than twice the df and well under the 5 criteria, with anything under 2 considered to be a 'very good' fit (Basco, 2013; Stanley & McDowell, 2014). Also, CFI, IFI and RMSEA levels meet the recommended criteria for model fit (Astrachan et al., 2014; Bentler & Bonett, 1980). In order to further demonstrate that the measures are empirically distinguishable and to mitigate common method bias concerns, the 4-factor solution is compared to a 1-factor solution and is found to be significantly better based on the examination of χ^2 differences: $\Delta\chi^2 = 353.407$; $\Delta df = 6$; $p < 0.001$ (Podsakoff, MacKenzie, Lee & Podsakoff, 2003; Sieger, Bernhard & Frey, 2011; Neubaum, Dibrell & Craig, 2012).

Reliability and validity of measurements

To consider the convergent validity and reliability of the newly formed measures we initially calculated composite reliability (Hair, Black, Babin & Anderson, 2010), for which each latent variable

exceeds the recommended .70 cut-off, with three of the four achieving over .80, thus demonstrating the internal consistency of the variables (Baumgartner & Homburg, 1996). Furthermore, all standardized factor loadings exceed the .50 cut-off, with all being over a .60 level, and are significant at the $p < 0.001$ level, primarily due to scale reduction procedures employed to increase goodness-of-fit. The average variance explained (AVE) for each construct was also over, or close to, the recommended .50. One slight area of concern is around the AVE of .447 for Guidance. However, as all other indicators of construct validity and face validity are strong, and following similar situations noted in family firm literature (Craig, Dibrell & Garrett, 2014; Uhlaner, Matser, Berent-Braun & Flören, 2015), the scale is retained in order to maintain its conceptual role. Discriminate validity is determined by comparing the square-root of AVE for each construct against the inter-construct correlations (Fornell & Larker, 1981; Hair et al., 2010); the square-root of AVE was higher than each inter-construct correlation for each construct, therefore showing discriminate validity.

Table 2: Construct measurement (CFA and scale reliability)

Constructs and items	Composite reliability	Loading
Participation	.865	AVE = .680
Before making decisions I consider what employees have to say		.847
I listen to employees advice on which work to advance		.810
I ask employees for their suggestions		.817
Guidance	.764	AVE = .447
I help people make working on their tasks more pleasant		.696
I schedule the work to be done		.661
I maintain definite standards of performance		.671
I explain the way tasks should be carried out		.645
Family Influence	.869	AVE = .574
Family members are willing to put in a great deal of effort beyond that normally expected to help the family business be successful		.605
Family members feel loyal to the family business		.761
The family has influence on the business		.648
Family members agree with the family business goals, plans and policies		.857
Family members really care about the fate of the family business		.879
Knowledge sharing	.806	AVE = .511
There is a great deal of face-to-face communication in our company		.708
We treat people's skills and experiences as a very important part of our knowledge assets		.665
Employees share information and knowledge with superiors		.799
We have systems and venues for people to share knowledge and learn from each other in the company		.681

Note: Standardized loadings significant at $p < 0.001$.

With construct validity and reliability established, it is necessary to adjust the conceptual model based on the newly formed factor structure. From this process a revised model structure is proposed where,

instead of the original three-way variation in leadership approach suggested by House and Ogbonna (2001), two individual approaches to leadership are tested. The revised version of the conceptual model, along with accompanying hypotheses, is shown in Figure 2.

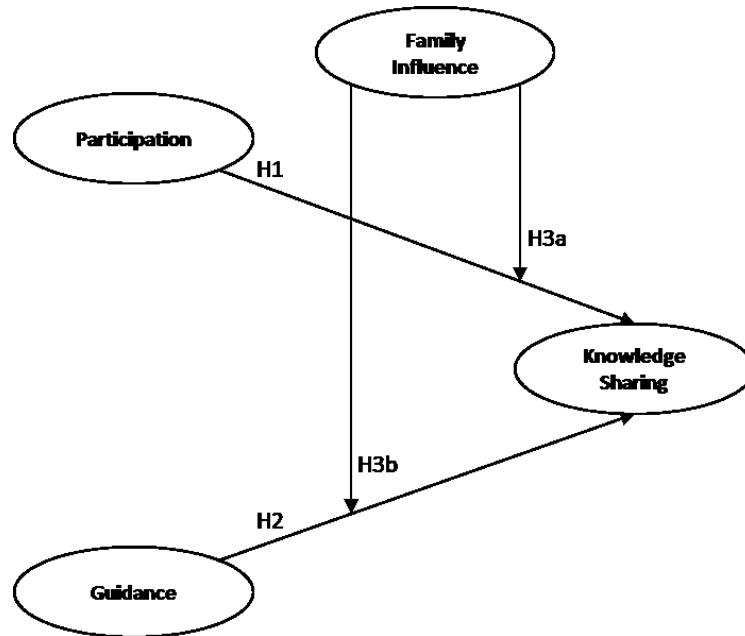


Figure 2: Adjusted conceptual model

Model testing

The final structural model, before considering family influence as a moderating factor, consisted of a three-factor solution representing: Participation; Guidance; and Knowledge Sharing. This achieved acceptable goodness-of-fit according to the recommended guidelines (Hair et al., 2010): $\chi^2/df = 1.862$; $p = .0001$; CFI = 0.925; IFI = 0.927; RMSEA = 0.089. It is found that choices in leadership approach explain 57.7% of the variance in the endogenous construct of Knowledge Sharing. The first hypotheses to be tested in the model relate to the impact choices in leadership approach have on the perception of knowledge sharing. The impact of both leadership approaches is found to be meaningful and in a positive direction, as hypothesised in H1 and H2; however, interestingly, participative approaches (.355, $p < .001$) are in fact slightly less meaningful than guidance (.616, $p < .001$) in relation to the perception of knowledge sharing. This seems to contradict those works where participation is eulogised as a necessity of collaborative culture (Gagné, 2009; von Krogh et al., 2012).

A visual representation of this is presented in Figure 3, where the standardised regression weights are shown, with the beta weights provided in parentheses.

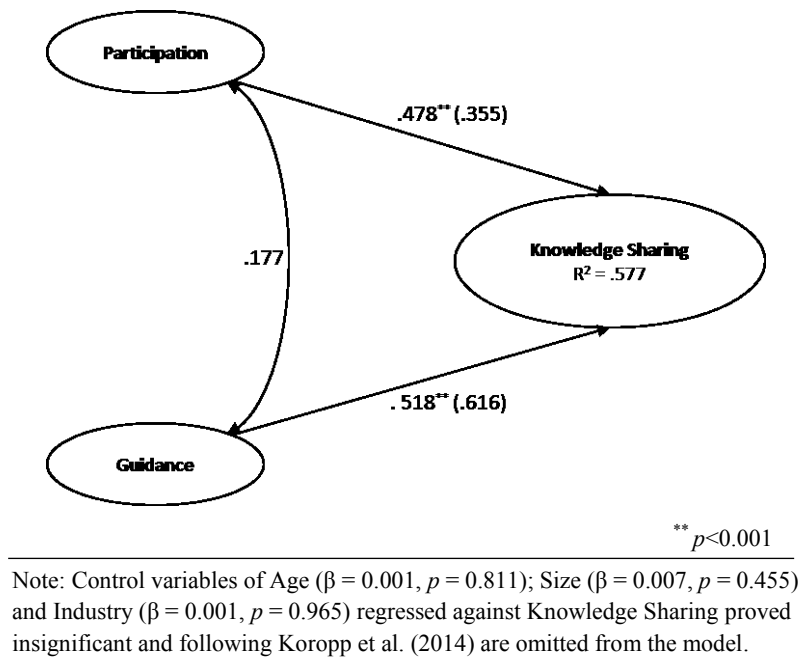


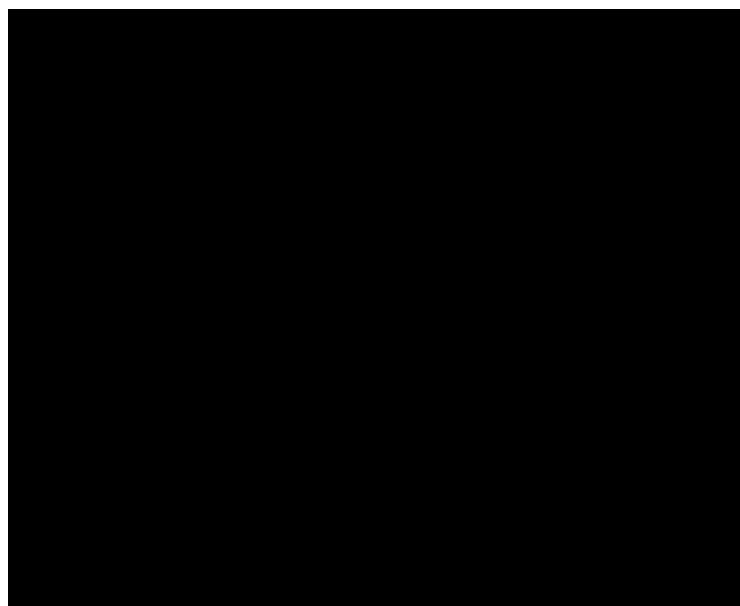
Figure 3: Model testing

Test for moderation

The second set of hypotheses considers the influence family focus can have on the strength of the relationships found between participative leadership approaches (H3a) and approaches based on guidance (H3b) on perceptions of knowledge sharing, respectively. We argue that family focus may help in building a supportive approach to knowledge sharing, based on guidance in relation to our adjusted model, while participative approaches may be positively affected by the reciprocal social norms created by family relations. Therefore the next stage of this analysis is to investigate the moderation effects of family focus on the structural paths uncovered in the previous section.

The results of the interaction effects of both Participation x Family Influence ($\beta = -.200, SE = .177; p = .088$) and Guidance x Family Influence ($\beta = -.085, SE = .066, p = .203$) proved to be insignificant in our model. Thus hypotheses 3a and 3b can be rejected as there are no meaningful effects noted by an increased family focus and the respective relationships between participative leadership approaches

and perceptions of knowledge sharing, and approaches based on guidance and perceptions of knowledge sharing. This is visually represented in Figure 4.

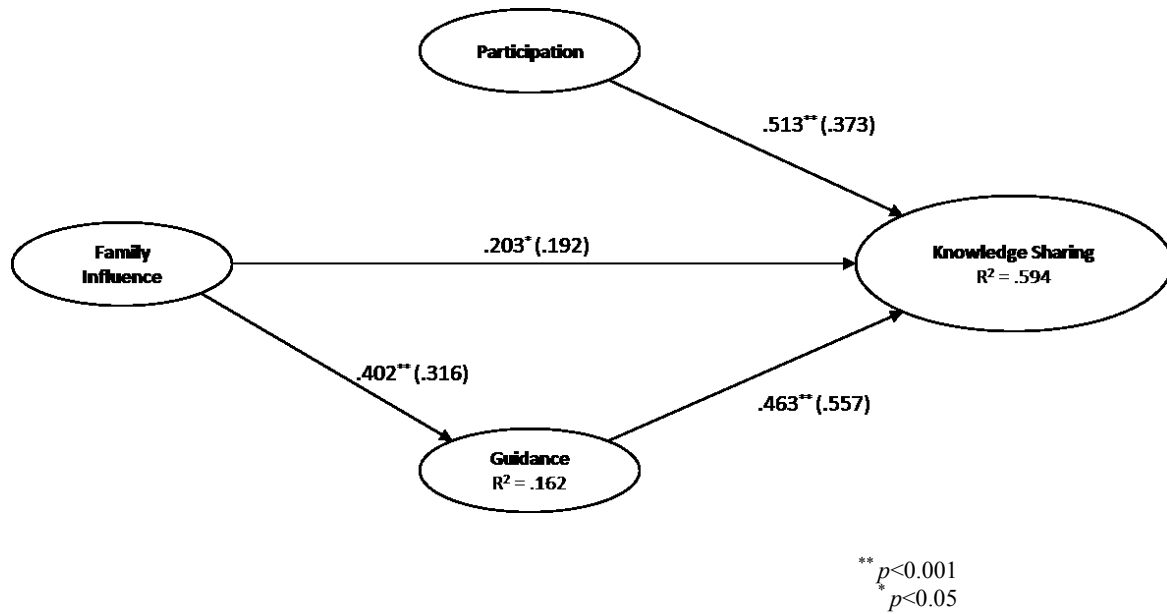


[†] not statistically significant

Figure 4: *Interaction effects (moderation)*

Post hoc analysis

In order to examine the theoretical assumptions made on the exogenous nature of leadership in relation to knowledge capabilities in the firm, we also conducted a *post hoc* analysis testing the fit of a model in which family focus is placed as the most exogenous variable. The resulting model of best fit ($\chi^2/df = 1.771$; $p < 0.001$; CFI = 0.901; IFI = 0.904; RMSEA = 0.084) shows that the positive effect family influence has on perceptions of knowledge sharing is partially mediated by guidance-based leadership (Barron & Kenny, 1986). However, the role of family influence is found to be unrelated to participative approaches to leadership. While the difference between this *post hoc* model (represented in Figure 5, with beta weights in parentheses) and our adjusted conceptual model is not statistically significant ($\Delta\chi^2 = 40.786$; $\Delta df = 59$; $p = 0.966$), it should be noted that this model also achieves acceptable goodness-of-fit indices, although the model of best fit remains our original model with leadership approaches as the most exogenous variable (Hair *et al.*, 2010).



Note: Control variables of Age ($\beta = 0.005$, $p = 0.056$ against Guidance; $\beta = 0.002$, $p = 0.471$ against Knowledge Sharing); Size ($\beta = -0.014$, $p = 0.103$ against Guidance; $\beta = 0.006$, $p = 0.515$ against Knowledge Sharing) and Industry ($\beta = -0.013$, $p = 0.644$ against Guidance; $\beta = 0.001$, $p = 0.966$ against Knowledge Sharing) proved insignificant and are omitted from the model.

Figure 5: Post hoc model (family influence as exogenous variable)

Supplementary qualitative findings

The two leadership approaches found are illuminated further in Table 3, which summarises descriptive themes in our supplementary qualitative data. These findings are separated according to the leadership style demonstrated in the firms, according our newly formed constructs, and help to describe and contextualise differences between the leadership approaches. We have also noted where the employee's response comes from a family-based member or non-family based, as this may help provide some context to the individual's perspective.

Table 3: Supplementary qualitative themes

Participation (n = 12)	Guidance (n = 14)
Family-based leader	
We'll all thrash around (an) idea. If it's their (employees) idea, to actually see it in fruition is fantastic. So it's driving them forward. (Interviewee 4)	They're (employees) not involved in that kind of thing (decision-making). In fact, now you've made me think about it, they're not really involved in very much. (Interviewee 7)
We can talk about strategy and decision like we're talking just now. Sometimes it's even just shouting across the office. (Interviewee 14)	My brother is very good, he teaches them (employees) what they've got to do, and instructs them carefully as to how they are going to be working. (Interviewee 8)
They (employees) could work on their own initiative and they get help from the whole, the centre, I would say. (Interviewee 11)	The standards we've managed to maintain have been pretty good... I think we've managed to motivate (employees). (Interviewee 10)
	I don't think I someone ever came to my door I've ever said, 'I'm too busy'. You might be, but you'll still make the time. (Interviewee 15)
Employees	
It's not a daily task list, I don't really know if there's a job description... it means the buck doesn't always stop with him (family-based leader), you know, he'll sort of pass it back to me, you know like, " <i>that was your responsibility</i> ". (Interviewee 18 – family-based employee).	If you can go to them (family-based leaders) and say, 'here's a problem and we think that could be a solution', then they will listen, you know. (Interviewee 26 – family-based employee)
I've been given a level of autonomy within here (the firm) (Interviewee 25 – non-family employee)	He (family-based leader) explains it in detail what's happening [sic], explains what's going to be done, what's not to be done, and it just normally works. (Interviewee 24 – non-family employee)
It's ownership (of task) for getting the staff on board... and everything else [intimating a positive impact on performance]. (Interviewee 23 – non-family employee)	The owner knows everybody who works in the company, and is able to identify who her strong members of staff are. On a personal level. (Interviewee 19 – non-family employee)

Discussion and contributions

Established literature on knowledge sharing finds choices in leadership approach crucial in determining the extent and quality of a firm's knowledge culture (Carmeli et al., 2010; Mumford et al., 2009; Srivastava et al., 2006). This study aimed to investigate the forms of leadership approach apparent in small family firms, and how they are related to the leader's perception of knowledge sharing within the firm, whilst also investigating the role of family influence in the relationship between leadership approach and perception of knowledge sharing. Accordingly, we proposed a conceptual model hypothesising the relationship between each leadership approach of the path-goal

framework (House, 1996; House & Mitchell, 1974), and the moderating role that family influence plays. While research on the impact of leadership on organisational climate is well-considered, the application of path-goal theory in the context of the family firm is lacking.

For the family business literature, the work extends our understanding of how the various leadership approaches of small family firms interact with the influence of family and examines the implications this can have for knowledge sharing. Specifically, we provide evidence that choices in leadership approach are directly related to the leader's perception of knowledge sharing. Our findings on participative approaches align with findings from out with the family business context by suggesting that, with family influence accounted for, participative approaches are the most strongly related to perceptions of knowledge sharing in the firm (Gagné, 2009; von Krogh et al., 2012). However, a key finding is the identification of a bespoke leadership approach combining elements of supportive and instructive behaviours, termed in this article as 'guidance', which is strongly related to perceptions of knowledge sharing. From our qualitative data this 'guidance' seems to be based on teaching and instruction, akin to selectively distilling the knowledge held by leading family members into purposefully selected individuals. Interviewee 10 suggests that such carefully controlled guidance may be a mechanism for maintaining the standards set by the family-based leaders. Uncovering a leadership approach that extends the predicted styles within the established path-goal framework is a key contribution that provides further evidence that the behavioural characteristics exhibited by many small family firms vary from larger corporate entities, and may not be best explained by broader management theory. This finding supports Gagné, Sharma & De Massis's (2014) insistence that family firms provide a rich and interesting context in which to test established theory.

Our findings on leadership styles have important implications for further research that looks at family firms; specifically, the integration of support and instruction into leadership style may suggest that family firm leaders demonstrating such behaviour see instruction as a way in which support can be delivered. For instance, the same leadership approach includes elements of making a task more pleasant with definite explanations and scheduling of work to defined standards. Holste and Fields (2010) suggest that this level of on-the-job instruction may help to engender inter-personal trust in

capabilities among organisational members, thus leading to a greater willingness to engage in collaborative behaviours, explaining to some extent the relationship found between this form of leadership approach and the leader's perception of knowledge sharing. On the other hand, we also find evidence of a distinctly participative form of leadership approach (Menon, 2001), which seems to be based entirely on empowerment by "*driving [others] forward*" (Interviewee 4), informality and "*autonomy*" (Interviewee 25) to incorporate employee "*initiative*" (Interviewee 11). Such empowerment is found by Hoe and McShane (2010) to accompany a shared vision on organisational goals, in turn leading to greater informal knowledge dissemination and use.

Divergence in the two leadership styles uncovered follows the key theme of heterogeneity seen in the family firm literature (Chua, Chrisman, Steier & Rau, 2012; Westhead & Howarth, 2007). While we found fewer leadership approaches than anticipated by the path-goal framework, there is a clear distinction between those demonstrating participative- and those demonstrating guidance-based behaviours. Although we do not claim that such findings represent all of the leadership styles taken up by small family firms, this does suggest that choices in leadership approach differ greatly, with the potential to inform many behavioural and cultural characteristics in each firm (as considered by Rijal (2010) and Taormina (2008), among others).

While the influence of family is not found to moderate the relationship between a leader's approach and their perception of knowledge sharing in the hypothesised manner, our *post hoc* analysis shows that influence of family, posited as an exogenous variable, relates specifically to guidance-based approaches to leadership. This suggests that leaders in firms with a greater level of family influence are more inclined to guide organisational members through support and instruction. Such a finding appears to clash with suggestions from Eddleston (2008) and Vallejo (2009) which attempt to link transformational forms of leadership to the steward role of a family firm founder. However, we would suggest that the variation of transformational leadership noted by these authors looked to how transformational leadership favoured and transmitted the vision of the controlling-family's values to the rest of the firm; as opposed to contradicting this, our concept of guidance may be seen as the mechanism through which this process takes place. For instance, while a family firm leader may

understand their employees “*on a personal level*” (Interviewee 19), they “*explain what’s going to be done [and] what’s not to be done*” (Interviewee 24), this could be seen as transmitting the value and intentions of the controlling family, leaving employees “*not really involved in very much*” (Interviewee 7). The transformation in this sense may be one-directional, in ensuring and controlling employees’ subscription to the vision of the family. Such apparent complexity in the nature of family firm leadership again highlights the limitations of existing leadership constructs to explain behaviours in this context. More investigation is needed not only into the intentions of leadership approach, but also to uncover the leadership behaviours which these intentions necessitate.

Our findings imply that the influence of family drives the style of leadership approach adopted, and that the resulting style has an instructional and supportive flavour. A lack of meaningful relationship between influence of family and participative behaviours suggests that, while such behaviours may well be based on family values and help the firm to achieve family-based outcomes (Sorenson, 2000), the intention seems not to be a transmission of the controlling family’s values, but rather focused on an open acceptance of values from other organisational members. We suggest that these two divergent approaches to leadership behaviours show a clear distinction in the focal intention of what the approach strives to achieve. Guidance-based leadership may be used to maintain family values throughout organisational activities, while participative behaviours seek to integrate the values of others in the organisation to inform decision-making.

An unexpected finding of our study is that both leadership approaches are meaningfully related to the leader’s perception of knowledge sharing. While this finding matches others in the knowledge sharing literature, where both democratic participation and the initiation of a clear goal and process structure are seen to facilitate attitudes to organisational learning (Sarin & McDermott, 2003), we would suggest that the separation of these styles into discrete leadership approaches has implications for the quality of knowledge sharing activity that takes place. This argument echoes some of the more recent trends seen in the border leadership literature. For instance, from the perspective of our family-influenced guidance-based approach, leadership may be considered a centralised function, which seeks to influence and motivate followers in predefined criteria of what constitutes knowledge and

modelling appropriate knowledge sharing behaviours (Rosen, Furst & Blackburn, 2007; von Krogh et al., 2012). Whereas, those demonstrating participative approaches may seek to stimulate a knowledge sharing, and indeed creation, based on spontaneous collaboration, a pooling of knowledge resources and a continuous adjustment of conduct; thus challenging the central leader posited by family-influenced guidance and applying a more distributed influence (Drath, McCauley, Palus, Van Velsor, O'Connor & McGuire, 2008; Gronn, 2002). Therefore, we would argue that where some family firm leaders see knowledge sharing as a method of transmitting and maintaining their centralised beliefs, others look to knowledge sharing as a way of purposefully decentralising and actively remoulding their beliefs. Implicated here are the nature and direction of knowledge sharing activity and the quality of the knowledge itself, issues beyond the scope of this work and requiring a deeper and more qualitative form of investigation.

Practical implications

This study views leadership behaviour as a choice; however it is a choice with some crucial implications for small family firms, particularly in relation to how knowledge is viewed and shared in the firm. From our findings, two options of leadership approach are available for small family firm leaders: participation, and guidance. Leaders should be aware that opting for participative behaviours, although theoretically most beneficial in achieving the benefits of open knowledge sharing, appears to be associated with a decentralised approach to knowledge contribution and decision-making. This may mean a control of, or disassociation from family influence in order for such behaviours to succeed. While those firms looking to embrace and maintain a strong family influence may choose a form of leadership behaviour based on guidance to maintain the centrality of family control.

Ultimately, the choice presented here is one of intention. If it is the intention of the small family firm leader to build the organisation around the guiding principles and values of the controlling-family, then a combination of supportive and instructional behaviours may further this goal. In this context knowledge sharing is seen more as a communication mechanism to transmit the values and rules of the family. However, if the intention is to build a participative organisation more aligned with the

advantages of a learning organisation, where organisational knowledge resources are dynamic and continually evolving, then a sacrifice of family influence may be necessary.

Limitations and future research

This study has a number of limitations which future studies may wish to address. First, the sample size is relatively low. While this is understandable given the tightly controlled sampling frame, it does mean that caution should be taken in generalising outside of the investigated population. In particular, the primary data come from small family firm owner-managers in Scotland. Although there is nothing to suggest any regional specificity here, comparable data from other areas would benefit the generalizability of findings. Also, the sample was limited to firms of the knowledge-intensive sectors. We follow Alvesson (2004) by focusing on these firms as they are particularly exposed to the necessity for effective knowledge sharing, however, caution must be taken when inferring the findings of this work onto other sectors. Future studies may therefore look to broaden the inclusion criteria of the study to allow for greater representation of the small family firm population as a whole.

The very specific nature of this study implies the constructs uncovered during analysis may not be entirely comprehensive and other theoretical explanations for a leader's perception of knowledge sharing may exist. In particular, as mentioned earlier, we cannot claim to have represented all leadership styles that exist in the small family firm context. While we adapted original, validated scales on leadership behaviour (Harris & Ogbonna, 2001), family influence (Astrachan et al., 2002; Klein et al., 2005), and knowledge sharing (Wang et al., 2009), these were substantially modified through the process of factor analysis to more accurately fit the data. Such modification suggests that existing theoretical constructs based on larger business entities may not adequately explain behavioural phenomena in small family firms, and more bespoke measurements such as those uncovered in this study may be required. That said, high levels of reliability were found with the modified scales through the CFA process, and therefore the limitations of the original scales should not be considered crucial. However, we would ideally have tested our new factor structure on a different sample, particularly with regards to the leadership measures. A further methodological issue is the cross-sectional nature of the work, meaning no causal conclusions can be drawn. There have

been a number of calls for more longitudinal data in family business studies, and some areas such as entrepreneurial orientation and innovation have been well treated (Cruz & Nordqvist, 2012; Kellermanns, Eddleston, Sarathy & Murphy, 2012). The themes of this study are yet another area which would benefit from the examination of these phenomena over time.

Finally, and perhaps most significantly, there is potential for bias in this work as small family firm leaders self-reported on their behaviours, limiting the study to the leader's highly subjective view of knowledge sharing in their organisation. This is of course common with studies utilising quantitative methods, however it also helps us to highlight the limitation of the theory-based contentions of the work. We acknowledge this bias to some extent with the inclusion of supplementary qualitative data to triangulate and provide representation to the multiple stakeholders of small family firm leadership; however, our attempts to engage employees of the small family firm leaders participating were somewhat limited by difficulties of access and willing. We must stress, therefore, the qualification to this work that; while our findings have shed light on the differing approaches leaders take in the family firm setting and their perceptions of knowledge sharing in their firm, this represents only what the leaders consider to be viable knowledge and knowledge sharing, instead of what can be considered knowledge from an organisational perspective (Gourlay, 2006). Highlighting such a limitation is important as we must acknowledge that the leaders of an organisation may not be in a position to objectively determine the viability of information or ideas. For this reason, we call for a broader view on the nature of knowledge sharing and knowledge use in general in small family firms. We join calls for more substantive qualitative work on family firms to uncover the intricate relational complexities impacting on knowledge contribution and knowledge use (Fletcher, De Massis & Nordqvist, 2016), and crucially a greater examination of the follower's role in knowledge sharing, most interestingly that of nonfamily employees (Xi, Kraus, Filser & Kellermanns, 2015).

Conclusion

In this article we extend our understanding of leadership in small family firms to acknowledge diversity in leadership approach, and investigate the implications of this diversity for perceptions of knowledge sharing. Two distinct leadership approaches are uncovered, both of which relate positively

to the leader's perception of knowledge sharing. The influence of family is seen to be associated with a guidance-based leadership approach, made up of supportive and instructional behaviours. Whereas a leadership approach based on participative behaviour bares no meaningful relationship with family influence. Thus, a choice in leadership approach is presented, contrasting organisation-focused participation against family-influenced guidance. We believe the implications of this choice to be great, and we offer some insight on how these implications may play out in the small family firm.

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